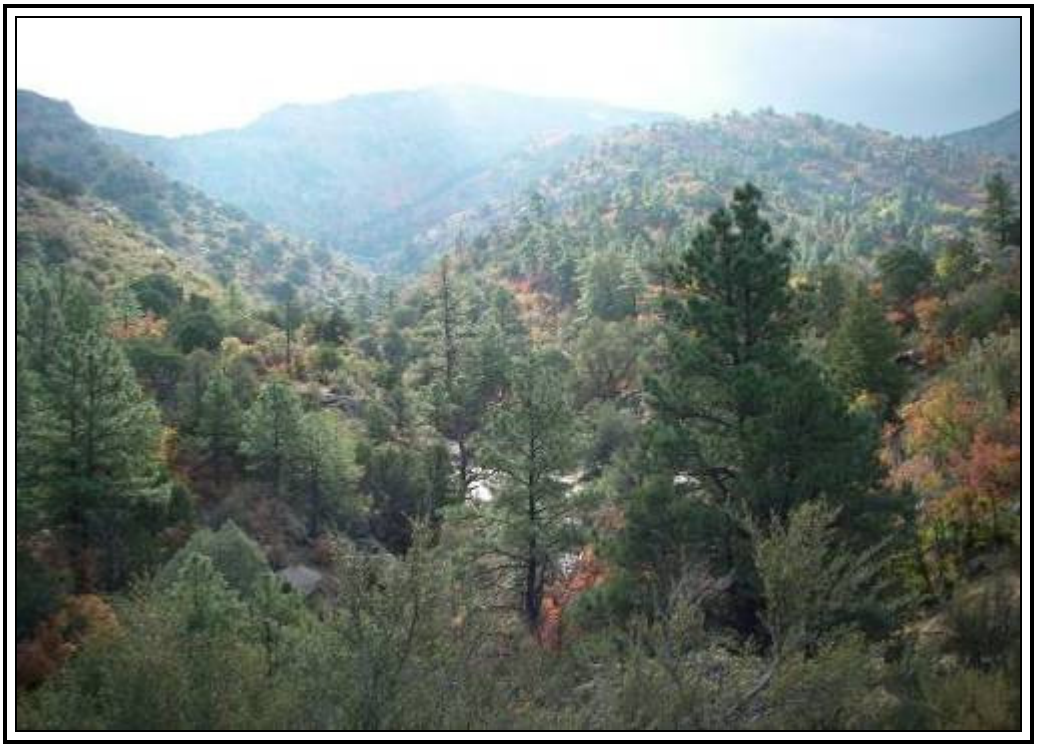
United States
Department of
Agriculture
Forest Service

Cibola National Forest
Mountainair Ranger District
Travel Analysis Process

For

Mountainair Ranger District
Travel Management

February 2009



Cibola National Forest
2113 Osuna RD NE
Albuquerque, NM 87113

Phone: 505-346-3900
Fax: 505-346-3901

Travel Analysis Process

For

Mountainair Ranger District - Travel Management

TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

Executive Summary

Travel planning in the Forest Service was traditionally split between the engineering program for road management and the recreation program for trails management. A recently revised federal regulation now combines the analysis of the motorized use of trails and roads under the Travel Analysis Process (TAP).

The TAP is intended to identify opportunities for the national forest transportation system to meet current or future management objectives, and to provide information that allows integration of ecological, social, and economic concerns into future decisions. The TAP is tailored to local situations and landscape/site conditions as identified by forest staffs and coupled with public input.

The outcome of the TAP is a set of recommendations for the forest transportation system. A thorough Travel Analysis supports subsequent National Environmental Policy Act (NEPA) processes, allowing individual projects to be more site-specific and focused, while still addressing cumulative impacts.

Summary of Issues

Issues were identified using previous public involvement and internal Forest Service input. A full list with details of the Public involvement and collaboration are listed in Appendix C.

- Impacts from cross-country motor vehicle travel and unauthorized routes
- Insufficient resources for maintenance of the existing system roads
- Need to obtain rights-of-way and access
- Continued use of unauthorized and decommissioned roads
- Environmental impacts
- Increased risk of human-caused fire
- Need for access to forest product gathering areas
- Trespass onto private lands from National Forest System lands
- Recreation user conflicts

Summary of Recommended Actions Responding to Issues

- Improve route number signage on roads and clearly sign forest boundaries to enhance compliance and enforcement.
- Rehabilitate areas damaged by cross-country travel and increase efforts to discourage travel on decommissioned and user created roads.
- Reduce the number of roads in occupied Threatened and Endangered species habitat
- Use seasonal restrictions and reroute roads to reduce impacts to wildlife habitat, soils and cultural resources and decrease maintenance costs.
- Develop partnerships with various State, County and local groups to defray maintenance costs.
- Emphasize right-of-way acquisition with out-year program planning and current year projects.

- Expand public outreach through information and interpretation to improve understanding of resource damage from improper use of off-road and trail driving. Provide accurate information to users for more informed decisions when choosing routes to travel.

Analysis Performed

A risk-benefit assessment was used to rank roads and motorized trails based on risks (wildlife disturbance, impacts on cultural resources, etc) and benefits (access to facilities, recreational opportunities for OHV users, etc.). The categories chosen to rank risk-benefit were based on issues identified in Appendix B and by criteria set by the members of the Interdisciplinary Team (IDT) in Chapter 4.

Key Results and Findings

Through the Travel Analysis Process the IDT ranked routes based on their *risks* to natural and cultural resources and their *benefits* to recreation use, forest product access and vegetation management, and emergency (primarily for fire management and suppression) access.

- 33.5% of roads in the current system have been assessed to have a greater risk than benefit, and should be considered for decommissioning, closure or converted to a trail, or mitigated to reduce resource risk.
- 66.5% of the current system are roads with high to medium benefits and should be considered for additional maintenance to mitigate resource risk, or used only for administrative needs.
- There were no motorized trails, areas, or newly constructed roads identified as being needed to meet administrative, recreation or other transportation needs, with the exception of some short reroutes around naturally or culturally sensitive areas or where right-of-ways are lacking (see Appendix D).

Chapter 4, section on Recommendations for Roads, and Maps 3 and 4 list and show the TAP recommendations. A complete list of the individual rankings for each road can be found in Appendix A. A breakdown of miles and percent of miles for the Transportation System are shown in Chapter 4, section Risk and Benefit Assessment (Roads Risk/ Benefit Matrix including Recommendations for Roads).

How the Report Will be Used

Travel Analysis Process results will assist the Mountainair RD in addressing issues related to the roads and motorized trails system, and open areas. It will be used to inform future analyses, decisions, and specific actions.

The Mountainair Ranger District (RD) comprises the Gallinas and Manzano Mountains. The Manzano Mountains run north and south reaching elevations of 6,000 to 10,098 feet at Manzano Peak. The mountain range slopes gently upward from the Estancia Valley to about 8,000 feet and then rises abruptly to its peak. The west side drops steeply into the uplands of the Rio Grande Valley.

The Manzano Mountains are situated in the midst of the fastest growing region in New Mexico – the Albuquerque Metropolitan Statistical Area (MSA), comprised of Bernalillo, Sandoval, Torrance, and Valencia Counties. By contrast, the Gallinas Mountains are a geographically and demographically isolated range west of Corona. The Gallinas rise to an elevation of 8,637 feet at Gallinas Peak, the highest point in the range.

The area near the west side of the Manzanos has a relatively low population density when compared to the rest of the Albuquerque MSA (BBER 2007). Current land use issues facing the Mountainair RD are related to the rapid growth around the mountain areas but it is somewhat insulated by the pattern of small, dispersed communities. As a result, new values, desires and needs are gradually being introduced that may conflict with traditional ways of life and culture in the area.

The Mountainair RD uses the transportation system for a variety of administrative purposes. Timber harvest, fire management, law enforcement and facilities management are all important activities that rely on the forest transportation system to be successful. The Mountainair RD also permits livestock grazing operations and many types of utility infrastructure, which need the transportation system to maintain facilities associated with these activities.

Table 1: 1985 Cibola National Forest Plan Management Areas for Mountainair Ranger District

Management Areas	Acres
3	36,554
11	33,522
12	9,351
13	7,694
15	118,932

Table 1 shows that the Mountainair RD falls within five Management Areas (MA) from the Cibola National Forest Plan. MA 3 is the Manzano Mountain Wilderness, MA's 11 and 12 are multiple-use areas with an emphasis on forest and watershed health, MA 13 emphasizes wildlife habitat and management and MA 15 is managed for both range and wildlife resources.

Recreational use in the Mountainair RD has tripled in the last 10 years, competing with more traditional uses, such as grazing, firewood, recreational herb gathering, as well as habitat integrity (BBER 2007). Mountain lions and desert bighorn sheep find refuge in these mountains. Expanding recreational use is likely to mean increased conflicts between human uses and wildlife.

The Mountainair RD is also known for dispersed recreation. Overnight camping with recreational vehicles is a popular activity, and many of these forest visitors bring off-highway vehicles (OHVs) to explore the forest beyond their base camp. Passenger car roads usually receive some road maintenance on

an annual basis, providing access for recreationists to get from towns and highways to dispersed locations. These main roads connect with a large system of lower maintenance level roads. Most of these National Forest roads were built for administrative activities such as timber harvesting, and do not receive regular maintenance.

The Mountainair RD includes the Manzano Mountain Wilderness. There are more than 64 miles of well-developed non-motorized trails that provide access to the Wilderness. The Manzanos are also not as readily accessible as the other mountain ranges in the Cibola National Forest and the Wilderness must often be accessed through many private parcels.

Closed roads, along with many decommissioned, and unauthorized routes (user-created), are commonly used by the public for motor vehicle operation, because cross-country travel is not currently prohibited. Berms, gates, fences, and signs have degraded or been vandalized over time, creating a confusing situation for forest visitors. Tire tracks are now a common sight over and around barriers.

Late summer and fall are popular hunting seasons where many OHVs are used across the forest. A number of outfitter guides operate on the forest, and a large number of out of town visitors come to this forest to hunt elk, deer, antelope, bear, turkey, and quail. Motor vehicles typically play a large role in hunts, not only for camping, but also to access and retrieve game.

Currently, there are no routes managed as motorized trails on the Mountainair RD. In general, the District is legally “open to cross-country motor vehicle use”. The scale of analysis for this TAP includes all known roads that meet the criteria in outlined in Step 2.

Chapter 1
STEP 1: SETTING UP THE ANALYSIS

Purposes

The purposes of this section are to:

- Identify the project area and state objectives
- Clarify the roles of technical specialists
- Develop a process plan and an analysis plan
- Address information needs

Project Area and Objectives

The Travel Analysis Process (TAP) will be conducted for Mountainair Ranger District (RD). The objective of the analysis is to provide scientific information for managing roads, motorized trails, and areas that are safe and responsive to public needs and desires, conforms to the Cibola National Forest Plan, is efficiently administered, has minimal negative ecological effects on the land, and is in balance with funding available for needed management actions. All existing system and additional motorized travel routes that were identified as part of the minimum road system, within the project area, are included in this Travel Analysis Report

The TAP is intended to be a broad scale comprehensive look at the transportation network. The main objectives of the TAP are:

- Balance the need for access while minimizing risks by examining important ecological, social, and economic issues related to roads and trails;
- Furnish maps, tables, and narratives that display transportation management opportunities and strategies that address future access needs, and environmental concerns.
- Identify the need for changes by comparing the current road and motorized trail system and areas to the desired condition;
- Make recommendations to inform travel management decisions in subsequent NEPA documents.

The analysis area for this TAP includes those areas on the Mountainair RD where motorized use is currently permitted (169,499 acres).

Roles of Specialists

An Interdisciplinary Team (IDT) was assigned by the Cibola National Forest Supervisor. The IDT members and their primary interdisciplinary discipline(s) or function are listed below:

Table 2: Interdisciplinary Team

Name	Resource Area
Karen Lessard	District Ranger
Bryce Bohn, Sara Campney, & Roxanne Turley	Writer/Editor
Lisa Jones	Recreation and Scenery
Mark Bernal	Fire and Fuels
Tedd Huffman	Hydrology and Watershed
Bill Falvey	Wildlife
Cynthia Benedict	Tribal Liaison
Don Hall	Lands and Minerals
Alan Warren	Range
Erin Hudson	Cultural Resources
Arlene Perea	Public Affairs Specialist; Recreation
Mike Gurule, Marcia Miolano, & Venus Jensen	Engineering and Roads
Geoff Holden	GIS Mapping and Analysis
Sara Campney	Social and Economic
Alan Kelso	Vegetation/Timber

Process Plan

TAP will follow the same six step process outlined in the Roads Analysis Process (RAP), as described in FS-643, *Roads Analysis: Informing Decisions about Managing the National Forest Transportation System* (USDA Forest Service 1999).

Analysis Plan

The IDT followed these steps in order to carry out the analysis:

- Review and assemble existing data, including the Cibola National Forest Roads Analysis.
- Verify accuracy of system road and motorized trail locations on maps.
- Identify discrepancies between on-the-ground conditions, the Forest's INFRA database, and current management direction. Document these conditions and data discrepancies giving priority to safety issues.
- Where possible, verify the current conditions of roads, trails, and associated features including safety issues, surface type and environmental issues.
- Identify preliminary access and resource issues, concerns, and opportunities.

- Identify additional issues, concerns, and opportunities through previous public involvement and internal resource staffs.
- Review State OHV laws.
- Perform the analysis concurrently with other plans and projects ongoing on the District.
- Recommend changes to the road and motorized trail system and areas based on the findings of this Travel Analysis to develop the minimum road system.

Information Needs

Information needs were identified and the IDT worked to gather as much information as available about the following:

- Accurate location and condition of all system roads and motorized trails within the analysis area. A complete inventory of unauthorized (user-created) routes is not required; however some of these routes were inventoried at the Forest's discretion.
- For each road and motorized trail, the following information is needed:
    1. Owner of the underlying land of each route
    2. Any right-of-way dedication to the FS
    3. Any additional right-of-way required
    4. Maintenance responsibility for the road or motorized trail, (Forest Service, County, City, Volunteer group or State)
- Assessment of previous and current opportunities, problems, and risks for all roads and motorized trails in the analysis area.
- Soil, water resources, invasive species, environmental issues, and biological communities.
- Public access and recreational needs and desires in the area, including access for nearby landowners.
- Current observed road uses.
- Current draft road management objectives.
- Areas of special sensitivity, resource values, or both.
- Best management practices for the area.
- Current forest plan and other management direction for the area.
- Agency objectives and priorities.
- Interrelationship with other governmental jurisdictions for roads and motorized trails.
- State laws that regulate motor vehicle use on and off public roads.
- Applicable federal, state, and local laws.
- Public and user group values and concerns.
- Forest scale and any project level Roads Analysis Process.
- Cultural resources

Chapter 2
STEP 2: DESCRIBING THE SITUATION

Purpose

The purpose of this step is to:

- Describe the existing road and motorized trail system
- Describe the Existing Direction
- Summarize the New Mexico State OHV/All-Terrain Vehicle (ATV) Laws
- Describe Road Maintenance Levels

Existing Road and Motorized Trail System

Currently, the Mountainair Ranger District (RD) does not have a motorized trail system nor do they have any areas specifically designated for motorized vehicle use. However, cross-country motorized travel has been permitted and so motorized use of trails outside the wilderness has been discouraged but not prohibited. In addition, there are 475.6 miles of National Forest System (NFS) roads open to motorized use on the Mountainair Ranger District. They are managed for all motorized vehicles licensed by any state to operate on public roads. These routes are shown on Maps 1 and 2.

Existing Direction for Roads, Trails, and Areas

A. General

Travel analysis is focused on identifying needed changes to the forest transportation system; identifying the existing direction is an important first step. In general terms, the existing direction includes the National Forest System roads, trails and areas currently managed for motor vehicle use. Restrictions, prohibitions, and closures on motor vehicle use is also part of the existing direction on the Mountainair RD.

Existing direction from laws and regulations, official directives, forest plans, forest orders, and forest-wide or project-specific roads decisions, determine the motorized routes and areas open to public motorized travel. This information about a unit's managed system is often documented in road and motorized trail management objectives, maps, Recreation Opportunity Guides, tabular databases, and other sources. Refer to Maps 1 and 2: Existing Direction Maps.

B. Roads

Open road
Existing roads open to the public for motorized use are forest system roads, which are currently in the Forest's INFRA database with the following attributes:

- System = National Forest System Road
- Jurisdiction = Forest Service
- Route Status = Existing
- Operational Maintenance Level = 2-5

Closed Road
Closed roads have been closed to vehicle traffic for at least a year but are necessary for future activities. They appear in the Forest's INFRA database under the following categories:

- System = National Forest System Road
- Jurisdiction = Forest Service
- Route Status = Existing
- Operational Maintenance Level = 1

6.4 miles[1] of roads were recorded in INFRA but there is not any corresponding road that could be identified or located on the ground. Therefore, these roads will be deleted from the Forest's database and will not be analyzed through this process.

Decommissioned Road
Decommissioned roads have some type of physical closure at their entrance (berm, etc.) or may be completely obliterated. They appear in the Forest's INFRA database under the following categories:

- System = National Forest System Road
- Jurisdiction = Forest Service
- Route Status = Decommissioned
- Operational Maintenance Level = 1-5[2]

In order to return a decommissioned road to service as a system road the NEPA process must be followed even when no physical work is required to allow motorized traffic back on the road.

Unauthorized Road
An unauthorized road is not included in a forest transportation atlas or database. These roads are usually established by various users over time. They were not planned, designed, or constructed by the Forest Service. Currently, these roads are not in the Forest's INFRA database.

C. Motorized Trails

Currently, there are no designated motorized trails on the Mountainair Ranger District.

D. Areas

There are no designated motorized areas on the Mountainair RD; however, cross-country travel is permitted on the RD.

E. Previous Travel Management Decisions
Table 3 summarizes the previous travel management decisions for the Mountainair RD. The Manzano Mountain Wilderness was excluded from the travel analysis process. There are no roads located within the wilderness. (see Map 1)

[1] These miles of road were determined using GIS data and only include ML 1 and 2 system roads
[2] The maintenance level of decommissioned roads is the level they were maintained at prior to decommissioning.

Table 3: Mountainair RD Previous Travel Management Decisions

Area	Acres	Direction
Manzano Mountain Wilderness	36,554	Congress designated the Manzano Mountain Wilderness in the 1978 in PL 95-237. The 1967 Wilderness Act prohibits the use of motorized or mechanized transport or equipment in designated wilderness areas.

New Mexico State OHV/ATV Laws

New Mexico state laws govern OHV use on roads in New Mexico. Under the State's laws, ATV's and off highway motorcycles can only be ridden on unpaved roads, which means that these vehicles can legally operate on most of the gravel and native surfaced roads on the Mountainair RD. Some pertinent sections of the NM State laws are:

- **Section 66-3-1011 (Effective January 1, 2006) Operation on streets or highways; prohibited areas.**
- **Section 66-3-1012 (Effective January 1, 2006) Driving of off-highway motor vehicles adjacent to highway.**

Further information may be obtained at:

- New Mexico ATV Brochure: http://www.wildlife.state.nm.us/publications/documents/OHV_Brochure_2007.pdf
- The NM Off-Highway Motor Vehicle Law: http://www.nmtourism.org/OHV/SB_252_Final_Version.pdf

Road Maintenance Levels

The Forest Service differentiates types of forest roads into five maintenance levels which define the level of service, and maintenance required at that maintenance level. Please refer to Appendix H for a more detailed description of the maintenance levels.

Road Maintenance Level 5 and 4 (ML5, ML4) – there are not any ML 5 or 4 on the Mountainair Ranger District

Road Maintenance Level 3 (ML3) – roads that are open and maintained for travel by prudent drivers in a standard passenger car.

Road Maintenance Level 2 (ML2) – roads are open for use by high-clearance vehicles; passenger car traffic is not a consideration.

Road Maintenance Level 1 (ML1) – roads that are closed to vehicular traffic intermittently for periods that exceed 1 year.

Table 4: Road Summary of Miles by type for the Analysis Area

Maintenance Level (ML)	Mountainair Ranger District Analysis Area Total Miles[3]
ML 5 Road	0
ML 4 Road	0
ML 3 Road	59.3
ML 2 Road	405.7
Open NFS Roads -- Total	**465**
ML 1 Road (Closed Roads)	10.8
Open NFS Roads plus ML 1 Roads (Closed Roads) - Total	**475.8**
Additional Roads Analyzed for the Minimum Road System[4]	48.7
Total Miles of Roads Analyzed	**524.5**

Not all unauthorized roads were analyzed in the TAP. Only roads that were considered for the Minimum Road System by the IDT were carried forward for analysis (13.2 miles). Other unauthorized roads will be analyzed on a case-by-case situation in future analyses. If any unauthorized motorized routes are needed, they will be added to the forest transportation system after appropriate analyses and decision processes.

Some of the additional roads considered are shown as decommissioned in the INFRA database (34.8 miles). The ID Team chose to consider these roads in the TAP because their location is important for meeting current management needs.

[3] Road miles used in this analysis were populated by the forest level GIS data set. The road mileage in Appendix A was populated using values from the INFRA database. These numbers may contain minor discrepancies because of data entry errors.

[4] These miles include decommissioned, and unauthorized roads.

Chapter 3
STEP 3: IDENTIFYING ISSUES

Purpose

The purpose of this Step is to:

- Identify Resource Concerns
- Identify Key Issues Related to Management of Existing Road System.

Resource Concerns

Motor vehicle use on the Mountainair RD has increased in recent years as the surrounding communities' population continues to grow. This increased use has led to the proliferation of unauthorized (user-created) routes, increased conflict between motorized and non-motorized recreationists, and degraded soil, water, vegetation, and wildlife habitat conditions.

Within the project, there are many places that have soils rated as either "erodes easily" or "low bearing strength", which indicates that the soil is susceptible to compaction and rutting. Severe erosion potential is more common to steeper slopes, but low bearing strength is common throughout the project area. These conditions make travel route construction and maintenance more difficult and costly considering the resource mitigations necessary to limit damage to soil productivity. Stream channels can be damaged by travel routes that either pass through or are directly adjacent to these channels. There can be damage to the stream even when use only occurs when the channels are dry.

Generally, roads, motorized trails and areas cause disturbance or displacement of wildlife, habitat fragmentation, habitat loss, reduction of habitat productivity, and in some cases, wildlife mortality. In some places, improper placement of roads and trails has led to loss or reduced productivity of important wildlife habitats.

Heritage resources are a concern throughout the project area as they are important considerations in all management activities on the District. There has been human occupation in the local area for thousands of years. Roads, motorized trails and areas can impact heritage sites, and necessitate rerouting a road or trail.

There is fire risk wherever people use the forest. This risk can come from many sources; smoking, vehicles, and campfires.

Cross-country motorized use can also facilitate the spread of invasive plants and put vegetative diversity at risk.

Key Issues

The key issues were identified using past public involvement and comments that addressed the Cibola National Forest road system as well as input from Forest Service personnel. The following roads issues on the Mountainair RD were identified and are in random order and do not represent a hierarchy of importance. Refer to Appendix C for further information on public involvement.

1) **Impacts from cross-country motor vehicle travel and unauthorized routes**
   Cross-country travel is allowed by current direction on much of the Mountainair Ranger District (RD). There are impacts resulting from cross-country motor vehicle. Use can damage vegetation, accelerate soil erosion, damage heritage sites, and disturb wildlife. Funding and resources to rehabilitate areas damaged by cross-country off-highway vehicle (OHV) travel is not adequate.

2) **Insufficient resources for maintenance of the existing system roads**
   Inadequate maintenance reduces access for National Forest users and management, accelerates soil erosion by concentrating surface water flow, and affects water quality by increasing sediment into water courses and intermittent drainages. Funding for road maintenance is not adequate to maintain the existing system and perform needed monitoring. (See Appendix H for more information on Road Maintenance Costs)

3) **Need to obtain rights-of-way and access**
   Not having legal road right-of-way through private lands bordering the Forest, restricts access for forest use and management. Landowners close gates to improve their privacy and to reduce vandalism and damage from the public's use of private roads to access Forest lands.

4) **Continued use of unauthorized and decommissioned roads**
   Since cross-country travel is allowed by current direction on the Mountainair RD, there has been a proliferation of unauthorized roads. Successful decommissioning of some of these, and system roads has proven difficult to maintain over the long-term.

5) **Environmental impacts**
   There is concern about damage from motorized use, including:

   a) Fragmentation and wildlife security: There is a concern that National Forest System roads and trails and unauthorized routes and constructing new trail segments fragment wildlife habitat and create barriers to movement. There is also a concern that routes reduce wildlife habitat capability to sustain populations and increase areas of disturbance;

   b) Impacts to drainage channels (watershed): There is a concern that routes (roads and motorized trails) in areas with intermittent and ephemeral stream channels may impair the ecological and hydrologic function of drainage channels;

   c) Impacts to soils: Much of the project area has soils that erode easily or have a low bearing strength. These soils are extremely susceptible to compaction and rutting;

   d) Impacts to vegetation: Concern was expressed about the loss of vegetation due to increased off-road vehicle use and spread of invasive species from seed sources dispersed by motorized vehicles.

e) Impacts to heritage and tribal resources: There is concern about impacts to heritage resources by motorized vehicles.

6) **Increased risk of human-caused fire**
Cross-country motorized vehicle travel can increase the likelihood of human-caused fire during high-fire risk conditions. Fine fuels do not normally exist within a road or trail due to maintenance and normal use but mechanical equipment off of roads and trails can start fires in fine fuels.

7) **Need for access to forest product gathering areas**
Piñon nut, firewood, traditional materials, and plant gathering are all important activities, especially for nearby Native American and Hispanic communities. Decommissioning or closing roads may affect access for traditional gathering activities.

8) **Trespass onto private lands from National Forest System lands**
Property owners adjacent to National Forest System lands are concerned that roads leading to their property will increase trespass and vandalism.

9) **Recreation user conflicts**
The volume and diversity of uses on the roads that are used for motorized and non-motorized recreation activities tends to lead to a conflict among users. All terrain vehicle (ATV) use on roads can change the road surface in a way that makes it more difficult for motorcycle and mountain bike use. Mixing motorized and trails users can increase safety hazards and reduce the quality of the experience for users seeking quiet recreation. An expected increase in area population and recreation demand is likely to increase user conflicts on roads.

Chapter 4
STEP 4: ASSESSING BENEFITS, PROBLEMS AND RISKS

Purpose

The purpose of Step 4 is to:

- Describe the Analysis Process
- Describe the Criteria Used in the Risk and Benefit Analysis Process
- Describe the Scoring and Rating
- Summarize the Risk and Benefit of Existing Motorized Routes
- Discuss the Statistical Distribution of Risk and Benefit Assessment
- Recommendations for Roads and Motorized Trails
- Guidelines for Mitigating Road Risks

The Analysis Process

The issues described in Step 3 were addressed by the Forest Interdisciplinary Team (IDT) in the following assessment. The risk and benefit criteria categories (Step 4, Table 7) were developed by considering the issues from Step 3 and the suggested resource questions for roads analysis described in FS-643 *Roads Analysis: Informing Decisions about Managing the National Forest Transportation System* (RAP). The IDT answered these resource questions in Appendix B of this report. By answering these questions and taking the previous issues into account, the IDT was able to crosswalk the information provided there to determine which issues should be carried forward into the analysis (see Crosswalk at the end of Appendix B). Each road was then evaluated against the identified risks and benefits.

Criteria Used in the Risk and Benefit Analysis Process

Roads on the Mountainair RD provide access for many uses. They also provide the infrastructure to facilitate motorized recreation and forest management. However, their presence has possible negative effects on the natural and cultural resources of the National Forest. The following categories for risks and benefits were identified by the IDT as the most important resource issues for managing the Mountainair RD transportation system.

Table 5: Resource Categories for Roads

RISK	BENEFIT
The presence or conditions of motorized use present risks associated with these categories:	Motorized uses benefit Forest management because they provide opportunities for these categories:
HUMAN-CAUSED FIRE	**RESOURCE ACCESS**
WILDLIFE/RARE PLANT	**TRIBAL ACCESS**
SEDIMENT DELIVERY	**RECREATION ACCESS**
SOIL PRODUCTIVITY	**MOTORIZED RECREATION**
CULTURAL RESOURCES	**EMERGENCY ACCESS**
TRIBAL USE/TCP[5]	
INVASIVE PLANTS	

Roads were scored with values of high, medium, or low risk combined with high, medium, or low benefit. Each resource specialist was asked to develop criteria for characterizing high, medium, or low values for roads in their resource area. For some criteria, the characteristics of the rankings were slightly different based on different geographic areas. The following tables detail these criteria.

Risk Assessment Criteria

Human-Caused Fire	
Risk assessment for the probability of wildfire from public use of Forest Service roads.	**HIGH**: Roads that access areas where use of Forest Service land has a pattern of human caused fire ignitions or access areas where use, land ownership, vegetation and fuel conditions indicate a high potential for human caused fire ignition.
	MEDIUM: Roads that provide access to previously burned areas or fuel reduction treatments which have been completed or maintained within the last 7 years.
	LOW: Roads that access areas that are not evaluated as high or medium risk.

[5] A Traditional Cultural Property (TCP) "can be defined generally as one that is eligible for inclusion on the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in the community's history, and (b) are important in maintaining the continuing cultural identity of the community" (National Register Bulletin #38). At this time, there are no identified TCPs on the Mountainair Ranger District; however, traditional cultural use is known to occur in the Manzano Mountains, even though the location of a TCP has not yet been identified.

Wildlife/Rare Plant Risk	
Impacts from motorized road or trail use including maintenance, development, and reconstruction will have varying degrees of risks (i.e. effects) depending on the spatial distribution (distance between open routes), road density (as defined in the Forest Plan and recommended by NM Department of Game and Fish), associated road noise (depending on habitat/terrain/species), maintenance level, and distance of roads from important wildlife habitats. For this Travel Analysis Process (TAP), the criteria for evaluating risk to wildlife are presented below. The criteria addresses risk from Forest Maintenance Level 1, 2, and 3 roads on wildlife and rare plants and serves to rank the risk as High, Medium, or Low. Wildlife and rare plants used for this analysis will be species that are, in order of priority, Endangered, Threatened, Candidate, and Sensitive. The reason for selecting these species over others such as game species is because they influence forest management activities more than other species. Only those Threatened, Endangered, and Sensitive species with the potential to occur on the District (with the exception of the Manzano Wilderness) are included; see the Biological Assessment & Evaluation (BAE) for species not analyzed. Species marked with an asterisk * in the table currently have little information as to their occurrence on the Mountainair Ranger District. In addition, habitat and populations for Management Indicator Species will be considered as well as migratory birds.	
Mexican Spotted Owl - Federally listed as Threatened under the Endangered Species Act with Designated Critical Habitat.	
	HIGH: Road or trail intersects a Protected Activity Center (PAC) or is within a ¼ mile of a known nest site. If nest site is not known, then the center of the PAC core will be considered the nest site for this analysis. Road or trail intersects Critical Habitat as designated in 2004 or Protected Habitat (slopes over 40% in mixed conifer that haven't been logged in the past 20 years) as defined in the MSO Recovery Plan.
	MEDIUM: Road or trail intersects Restricted Habitat (all mixed conifer or riparian habitat) as defined in the MSO Recovery Plan.
	LOW: Road or trail does not intersect a PAC, Protected, or Restricted Habitat or is more than ¼ mile away from a known nest site.
Southwestern willow flycatcher - Federally listed as Threatened under the Endangered Species Act with Designated Critical Habitat (although no Critical Habitat within project area).	
	HIGH: Road or trail intersects potential breeding habitat.
	LOW: Road or trail does not intersect potential breeding habitat.
Bald eagle - Recently delisted under the Endangered Species Act. Now listed as a Regional Forester Sensitive Species.	
	HIGH: Road or trail intersects a wintering area.
	LOW: Road or trail does not intersect a wintering area.
Peregrine falcon - Recently delisted under the Endangered Species Act. Now listed as a Regional Forester Sensitive Species.	
	HIGH: Road or trail intersects a nesting area.
	LOW: Road or trail does not intersect a nesting area.
Northern Goshawk - Listed as Sensitive by the Regional Forester.	
	HIGH: Road or trail intersects a Post-Fledging Family Area (PFA) or is within ¼ mile from a known nest site. If nest site is not known, then the center of the PFA will be considered the nest site for this analysis.
	MEDIUM: Road intersects a "Dispersal PFA". These areas were designated to maintain potential nesting habitat for the Northern goshawk
	LOW: Road or trail does not intersect a PFA or is more than ¼ mile from a known nest site.
Gray vireo - Listed as Sensitive by the Regional Forester.	
	HIGH: Road or trail intersects a known high density nesting area or known nest site.

Wildlife/Rare Plant Risk	
	LOW: Road or trail does not intersect a known high density nesting area or known nest site.
Loggerhead Shrike - Listed as Sensitive by the Regional Forester.	
	HIGH: Road or trail intersects a nesting area or known nest site.
	LOW: Road or trail does not intersect a nesting area or known nest site.
Rocky Mountain Bighorn sheep - Listed as Sensitive by the Regional Forester.	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
***Texas horned lizard** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
***Spotted Bat** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
***Allen's lappet-browed bat** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
***Pale Townsend's big-eared bat** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
***Dwarf shrew** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
***Merriam's shrew** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
***Long-tailed vole** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
Gray-footed chipmunk- Listed as Sensitive by the Regional Forester	
	HIGH: Road intersects a known habitat area.
	LOW: Road does not intersect a known habitat area.
***Sandia alum root** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
***Tall bitterweed** - Listed as Sensitive by the Regional Forester	
	HIGH: Road or trail intersects a known habitat area.
	LOW: Road or trail does not intersect a known habitat area.
Management Indicator Species (MIS)	
Note that the Mountainair Ranger District does not have "Crucial big game winter or calving areas" designated. Most areas for big game are considered "general year-round big game range". Remaining MIS species do not have known nesting or concentration areas (such as bear dens).	
Elk - Mountain grassland and mixed conifer habitats	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend.
	LOW: Location or use of road can affect Forest-wide habitat or population trend.
Mule Deer - Mountain shrub and piñon-juniper habitats.	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend.

Wildlife/Rare Plant Risk	
	LOW: Location or use of road can affect Forest-wide habitat or population trend
Red-naped sapsucker - Deciduous forest habitat	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend.
	LOW: Location or use of road does not affect Forest-wide habitat or population trend.
House Wren – Riparian habitat	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend
	LOW: Location or use of road does not affect Forest-wide habitat or population trend.
Juniper Titmouse - Piñon-juniper habitat	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend.
	LOW: Location or use of road does not affect Forest-wide habitat or population trend.
Black bear - Spruce-fir and mixed conifer habitats	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend.
	LOW: Location or use of road does not affect Forest-wide habitat or population trend.
Pygmy nuthatch - Ponderosa pine habitat	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend
	LOW: Location or use of road does not affect Forest-wide habitat or population trend.
Hairy woodpecker - Mixed conifer habitat	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend
	LOW: Location or use of road does not affect Forest-wide habitat or population trend.
Merriam's Turkey - Ponderosa pine habitat	
	HIGH: Location or motorized use of road affects Forest-wide habitat or population trend.
	LOW: Location or use of road does not affect Forest-wide habitat or population trend.

Migratory Birds, Important Bird Areas (IBAs), and Over-wintering Areas

Executive Order 13186 places emphasis on conservation of migratory birds. No Southwestern Region or Cibola National Forest directives have been developed to provide guidance on how to incorporate migratory birds into NEPA analysis. Regional advice is to analyze effects in the following manner: (1) effects to Highest Priority Birds listed by Partners in Flight; (2) effects to Important Bird Areas (IBAs); (3) effects to important over-wintering areas.

Conservation Region

The project area falls within the Southern Rockies/Colorado Plateau Conservation Region. Conservation issues identified for Neo-Tropical MB in the region include: 1) recreational use of important habitat, 2) grazing, 3) fire and fire suppression, and 4) logging.

Highest Priority Bird Species

The Cibola National Forest's 2005 Breeding Bird Survey report provides a summary of the potential occurrence of priority bird species by habitat type. Those species potentially occurring in habitats similar to the project area on the Mountainair Ranger District were reviewed. There are six distinct habitat types occurring on the two distinct geographic areas (Manzano & Gallinas Mountains) including the piñon-juniper (pj), grasslands, ponderosa pine (also includes pine-oak habitats), oak woodlands, riparian, and mixed conifer.

Wildlife/Rare Plant Risk	
Migratory Birds	
Band-tailed pigeon (pj to spruce fir depending on food availability, fruits and nuts- esp. acorns and pine nuts); Black-chinned hummingbird (below 7000 feet, canyons with deciduous trees); Scaled quail (below 7000 feet, desert-shrub grasslands); Crissal thrasher (desert shrub); Black-chinned sparrow (mountain shrub); Vesper sparrow (grassland shrub); Eastern meadowlark (grassland); Broad-tailed hummingbird (from 7000 feet upwards). Habitat includes meadows and open forest, which allow for forb (flower) growth; Gray flycatcher (pj); Flammulated owl (ponderosa pine); Williamson's sapsucker (ponderosa/mixed conifer); Red-naped sapsucker (ponderosa/high elevation riparian, mixed conifer); Olive-sided flycatcher (ponderosa pine, mixed conifer); Piñon jay (pinyon-juniper (pj) woodlands); Virginia's warbler (ponderosa pine, mixed conifer); Black-throated gray warbler (pj); Grace's warbler (ponderosa pine).	
	HIGH: Motorized use of this route will result in "take" or unintentional "take" (kill, pursue, hunt, shoot, wound, trap, capture, collect, or attempt to do same). Location or motorized use of road or trail impacting a forest wide habitat or population trend.
	LOW: Motorized use of this route will not result in "take". Location or motorized use of road or trail not impacting forest wide habitat or population trend.
Important Bird Areas	
	HIGH: This route intersects an IBA.
	LOW: This route does not intersect an IBA.
Over-wintering Areas	
	HIGH: This route intersects an over-wintering area.
	LOW: This route does not intersect an important over-wintering area.

Sediment Delivery[6]	

Risk of eroded soil being delivered quickly and directly into stream channels where it could fill channels, disrupt stream flow and impair aquatic organism habitat.	**HIGH**:
	• More than 100 feet of road or motorized trail on severe erosion potential soil is in "close proximity" to a stream
	  o "Close proximity" is defined as:
	  ▪ For all mapped streams:
	  • 50 feet either side of an intermittent/ephemeral channel;
	  • 75 feet either side of a perennial channel;
	  ▪ For water quality impaired (Section 303(d) of the Clean Water Act listed) reaches:
	  • 100 feet either side of intermittent/ephemeral channels within the impaired watershed;
	  • 300 feet either side of a perennial channel; -or-
	• Crosses stream channel two times or more; -or-
	• A road or motorized trail that rates as medium, but crosses a known fishery;

	MEDIUM: • More than 100 feet of road or motorized trail is in "close proximity" to a stream, but is not on soil rated as severe erosion potential; -or- • Crosses stream channel 1-2 times;

[6] Ratings were adjusted based on known sedimentation, erosion, rutting, or compaction problems observed in the field. Field observations are recorded in the Remarks column in Appendix A.

Sediment Delivery[6]	
	LOW: • Road is not in "close proximity" to a stream; -and- • Road does not cross a stream channel.

Soil Productivity[7]	
Risk of soil being eroded off site, compacted or rutted to an extent where soil's ability to function chemically, physically and biologically is impaired.	**HIGH**: More than 25% of a road or motorized trail occurs on Terrestrial Ecosystem Units (TEU) with severe erosion potential;
	MEDIUM: • Between 1 and 25% of a road or motorized trail occurs on TEU with severe erosion potential; -or- • More than 25% of a road or motorized trail occurs on TEU with low bearing strength;
	LOW: • Less than 1% of a road or motorized trail occurs on TEU with severe erosion potential; -and- • Less than 25% of a road or motorized trail occurs on TEU with low bearing strength

Cultural Resources	
Risk assessments for roads analysis are guided by the following questions: 1. Has the road been surveyed to current standards (30 meters on either side of the road, total corridor of 60 meters) for cultural resources? 2. Does the road impact any cultural resources? - Impacted sites are defined as those likely to be damaged by vehicles or road maintenance; the closer to the road the higher risk of impact. Sites outside of the maintenance corridor are not considered to be at risk. Only sites that have been determined Eligible or Undetermined for the National Register of Historic Places will be included in the analysis.	**HIGH**: Sites are present within the road bed or less than 50% of the length of the road has been surveyed for cultural resources.
	MEDIUM: Sites occur within the 60 meter corridor (but not within the road bed) or 50-75% of the total length of the road has been surveyed for cultural resources or the road has been surveyed but not to current standards.
	LOW: No sites occur within the 60 meter corridor and 75-100% of the total length of the road has been surveyed to current standards.

[7] Ratings were adjusted based on known sedimentation, erosion, rutting, or compaction problems observed in the field. Field observations are recorded in the Remarks column in Appendix A.

Tribal Use/Traditional Cultural Property (TCP)	
	HIGH: • Route is on or near an identified TCP, and; • Route was highlighted by tribe(s) during consultation because of its proximity to a TCP or traditional use area and they want it closed or to be non-designated, or because it contributes to trespass issues involving tribal lands.
	MEDIUM: • Route is in vicinity of area known for specific or landscape level TCPs and/or traditional cultural use; location of TCP may or may not have been not been identified.
	LOW: • No identified TCP in area, and; • No traditional cultural use identified in area.
NOTE: Near = causing interference with traditional activities. This is a subjective term, not a set distance. It means that motorized use on a given road is having an impact upon a traditional practitioner's use of a TCP or use area. At this time, there are no identified TCPs on the Mountainair Ranger District. Traditional use is known to occur in the Manzano Mountains; for that reason some roads were rated for medium risk.	

Invasive Plants	
Risk assessment for new introduced populations of undesirable plant species. Vehicles can carry and spread plant parts or seeds into disturbed areas along roads or in the road bed.	**HIGH**: Roads that provide access to, pass through, or border private lands. Includes roads identified as main traffic routes.
	MEDIUM: Roads that access Forest Service administrative sites, structures or water developments, and where vehicle parking is a regular occurrence.
	LOW: Roads that do not provide access to, pass through, or border private lands. Roads not identified as main traffic routes. Roads that do not access Forest Service administrative sites, structures, nor water developments, and where vehicle parking is not a regular occurrence.

Benefit Assessment Criteria

Resource Access **Manzano Division-** Access to vegetative treatment areas, or harvest or permittee access, or general access.	
These standards are based on the assumption that the ponderosa pine and mixed conifer stands have a higher need for periodic treatments to meet the uneven aged management called for in the northern goshawk guidelines. Readers should not infer that there is no commercial activity in piñon-juniper or that treatments there are less important to forest health. Loop roads were avoided as they are unnecessary for resource access and to minimize road maintenance needs. Roads were rated under the assumption they had right-of-way. Some roads were rated higher	**HIGH**: • All operational maintenance level 3 roads. **or** • Roads that provide access to multiple range waters or large areas of land. **or** • Roads that are the primary access to several planned or potential vegetative management projects, wildland-urban interface fuelbreaks, or commercial wood resources. **or** • Roads that will be used many times for vegetative management in future projects. These roads' improved condition reduces haul time/cost or improves safety significantly. **and** • In gentle topography, roads that are adequately spaced (½-mile x ½-mile grid). **or** • In broken topography, roads that are located along ridges and comply with Best Management Practices (BMP's). **and** • Roads that access primarily ponderosa pine or mixed conifer stands (there may be minor piñon-juniper stands mixed in). **and** • Roads that do not loop.

Resource Access **Manzano Division-** Access to vegetative treatment areas, or harvest or permittee access, or general access.	
than the criteria calls for because of a need for a portion of the road. This was reflected in the Remarks column of Appendix A.	**MEDIUM:** • Roads that provide access to a range water or provide general access. **or** • Roads that access several planned or potential vegetative management projects, habitat improvement projects, wildland-urban interface fuel breaks, or commercial wood resources. **or** • Roads needed to maintain past projects. It is less important for the roads to be maintained to a higher standard because they are only needed for occasional use. Wildlife-habitat-improvement projects generally only need to be accessed every 20 years or so. **and** • In gentle topography, roads that are moderately spaced (between ½-mile x ½-mile grid and ¼-mile x ¼-mile grid). **or** • In broken topography, roads that are located along ridges *or* are in compliance with Best Management Practices (BMP's) if on lower slopes. **and** • Roads that access a mix of ponderosa pine-mixed conifer stands and piñon-juniper stands. **and** • Roads that minimize loops.
	LOW: • Roads that do not provide access to range waters. **or** • Roads that provide access to wildlife waters. **or** • Roads that do not provide access to commercial species wood resources, or where consistent or recurring access by low-clearance hauling vehicles is not needed. **or** • Roads that access areas having experienced stand replacing wildfire. • In gentle topography, roads that are in excess of the ¼-mile x ¼-mile grid and/or are improperly located and may violate Best Management Practices (BMP's). **or** • In broken topography, roads that are improperly located and may violate Best Management Practices (BMP's). **and** • Roads that access only piñon-juniper stands or grasslands. **and** • Roads that create loops.

Resource Access **Gallinas Division-** Access to range water or general access	
These standards are based on the assumption of very low demand for wood products within the planning horizon and corresponding extensive management. Loop roads were avoided as they are unnecessary for resource access and to minimize road maintenance needs. Roads were rated under the assumption they had right-of-way. Some roads were rated higher than the criteria calls for, because of a need for a portion of the road. This was reflected in the Remarks column of Appendix A.	**HIGH**: • All operational maintenance level 3 roads. **or** • Roads that provide access to multiple range waters. **and** • Roads that provide general access to a large area (1/2-mile per section or less). **and** • Roads that are in compliance with Best Management Practices (BMP's) and avoid meadows. **and** • Roads that do not loop.
	MEDIUM: • Roads that provide access to single range water. **or** • Roads that provide general access to a moderate area (1/2-mile to 1-mile per section). **and** • Roads that are generally in compliance with Best Management Practices (BMP's) and avoid meadows. **and** • Roads that minimize loops.
	LOW: • Roads that do not provide access to range waters. **or** • Roads that provide access to wildlife waters. **or** • Roads that access areas having experienced stand replacing wildfire where only natural regeneration is planned. **or** • Roads that are improperly located and may violate Best Management Practices (BMP's) or affect meadows. **or** • Roads that create loops.

Tribal Access	
To TCP and Traditional Cultural Use Area	**HIGH**: • Route accesses an identified TCP, and; • Route was highlighted by tribe(s) because it is valued or needed by tribe to access TCP or traditional use area.
	MEDIUM: • Route is a known access and/or parking area for accessing TCP or area where traditional use is known to occur; location of TCP may or may not have been identified.

	LOW: • No traditional use and no known TCP in area, or; • Access for traditional cultural activities has not been identified as important to tribe.

Recreation Access	
Access to dispersed recreation areas, trailheads, campgrounds, picnic grounds, traditional activities, and private inholdings without other access.	**HIGH**: Access to recreation uses that require access by passenger car. Examples are developed sites such as picnic or camping grounds.
	MEDIUM: Access to regularly used dispersed recreation sites and areas where high clearance vehicles are acceptable for access.
	LOW: Limited access to seldom used dispersed recreation sites and roads with no access to developed facilities.

Motorized Recreation	
Roads that are important as a recreation opportunity for motorized use or driving for pleasure and scenic viewing. Also roads that provide important connections to recreation opportunities such as trailhead access.	**HIGH**: Scenic roads that are highly used for driving for pleasure and scenic viewing. These will include commonly publicized routes in recreation opportunity publications and routes identified as high benefit through the public involvement process. Roads that provide important connections to recreation opportunities such as trailhead access.
	MEDIUM: Routes commonly used as a recreation opportunity for motorized activities.
	LOW: Routes seldom used as a recreation opportunity for motorized activities.

Emergency Access	
Access for fire suppression, evacuation routes.	**HIGH**: Roads that provide primary or alternate emergency ingress and egress from populated areas (ex. campgrounds and residences). And/or roads that provide access to areas at high risk to life and property from fire in wildland urban interface areas which makes response time critical. And/or roads that provide access to facilities related to fire suppression.
	MEDIUM: Roads that provide access to high benefit resource areas or areas that have sparsely unoccupied structures that are at high risk from fire.
	LOW: Roads that provide access to areas that are not populated or where access by high clearance vehicles will be adequate for fire suppression.

Scoring and Rating

For each road analyzed the overall risk and benefit assessment was based on scores aggregated from separate risk and benefit assessments completed by individuals on the Interdisciplinary Team (IDT). Each road generated a high, medium, or low rating based on the criteria stated in the previous section, which produced the road's score. The scores were totaled to find the overall risk and benefit ranking of each road.

There are seven resource risk criteria and five benefit criteria for each road analyzed. Scores were based on a point system in which a high rating yielded 3 points, a medium rating yielded 2 points, and a low rating yielded 1 point. Therefore, the overall scores for risk range from 7 (1 point for each criteria) and 21 (3 points for each criteria) and the overall scores for benefits range from 5 (1 point for each criteria) to 15 (3 points for each criteria). Refer to example below in Table 8 and 9.

It was decided that the ranges for overall high, medium, and low benefits would be based on the number of resources or benefits affected by the road and the intensity of those effects as described by the specialist's rankings. The IDT preparing the Travel Analysis Process (TAP) set the criteria for a road to be elevated from low to medium and from medium to high.

Table 6: Point range for the overall score for a Risk

	Point Range	Overall Score
RISK	7 – 10	Low Risk
	11 – 13	Medium Risk
	14 – 21	High Risk

Table 7: Point range for the overall score for a Benefit

	Point Range	Overall Score
BENEFIT	5 – 6	Low Benefit
	7 – 9	Medium Benefit
	10 – 15	High Benefit

These categories were calculated mathematically and did not consider the severity of the impact beyond the criteria presented in the previous section. In the "Remarks" column in Appendix A, specialists that wanted to record a particular or severe concern made notes that indicated that the road considered may need further mitigation or may require a different kind of action than those typically recommended for its cost-benefit category.

Table 8: Example of the Risk scoring system for a road

	Risk Categories	H, M, and L Rating	Points for each Rating
1	HUMAN CAUSED FIRE	M	2
2*	WILDLIFE/ RARE PLANTS	M	2
3	SEDIMENT DELIVERY	M	2
4	SOIL PRODUCTIVITY	L	1
5	CULTURAL RESOURCES	M	2
6	TRIBAL USE	L	1
7	INVASIVE PLANTS	H	3
		TOTAL POINTS:	13 OUT OF 21 POSSIBLE **MEDIUM RISK**

*Note: For Wildlife/Rare Plant species, the overall category ranking was determined by the highest score of any species in the ranking criteria. For instance, if the only species with a potential to be affected was southwest willow flycatcher and its score is medium, then the overall score for the Wildlife/Rare Plants category would be medium, or 2.

Table 9: Example of the Benefit scoring system for a road

	Benefit Categories	H, M, and L Rating	Points for each Rating
1	RESOURCE ACCESS	L	1
2	TRIBAL ACCESS	M	2
3	MOTORIZED RECREATION	L	1
4	RECREATION ACCESS	H	3
5	EMERGENCY ACCESS	H	3
		TOTAL POINTS:	10 OUT OF 15 POSSIBLE **HIGH BENEFIT**

Based on this example the overall score would be “Medium” for risk and “High” for benefit.

Reference Appendix A – Risk and Benefit Assessment for each road for the overall risk and benefit results.

The Risk and Benefit Matrix (Table 10 thru 14) lists a summary of miles and percent of miles for all miles of road analyzed along with the recommendation.

Table 10: Roads Risk and Benefit Matrix and Recommendations for Existing National Forest System Roads

Of the 475.6 miles of roads that constitute Existing National Forest System Roads (ML1 – ML3), approximately two-thirds of the roads rated as a medium or high benefit, meaning that the road has several purposes that are important to Forest Service management or public use. Of those roads which ranked as medium or high benefit, a third of those roads were also a high risk due to resource concerns. These High Risk/ Medium Benefit and High Risk/High Benefit roads should be the focus of road maintenance funds because mitigating their adverse effects will be the most efficient way to lower the impact of the forest transportation system on the surrounding natural resources.

ROADS - OPERATIONAL ML 1 TO ML 3				
	BENEFITS[9]			
RISKS[8]	**Scores**	**Low 5-6**	**Medium 7-9**	**High 10-15**
	High 14-21	(HL) Decommission, Close, or Mitigate – Highest Priority **(33)[10]or (6.9%)[11]**	(HM) Mitigate or Admin Use Only **(111.5) or (23.4%)**	(HH) Maintain and Mitigate - Highest Priority **(94.9) or (20%)**
	Medium 11-13	(ML) Decommission, Close, or Admin Use Only **(64.8) or (13.6%)**	(MM) Mitigate **(75.5) or (15.9%)**	(MH) Mitigate and Maintain - Second Priority **(3.3) or (0.7%)**
	Low 7-10	(LL) Decommission, Close, or Convert to Trail **(60.6) or (12.7%)**	(LM) Maintain **(29.1) or (6.1%)**	(LH) Maintain **(3.1) or (0.7%)**

TOTAL OPERATIONAL ML 1 TO ML 3 = 475.8 MILES

[8] Risks represent the range of total risk scores assigned to each category.
[9] Benefits represent the range of total benefit scores assigned to each category.
[10] Represent the number of road miles assigned to each box in the matrix.
[11] Represent miles of road in matrix box as a percentage of the total miles of roads in these operational maintenance levels.

Table 11: Risk and Benefit Matrix and Recommendations for ML 1 Roads

Maintenance Level 1 roads are roads that are closed for at least a year at a time. Currently, there are very few of these roads on the Mountainair RD. Nearly 90% of the existing ML 1 roads fall into the high risk category. The restricted nature of their use is therefore appropriate.

It should also be noted that some ML Level 2 and 3 roads may be recommended for closure, decommissioning or restricted to administrative uses according to Table 10. Depending on future decisions, the number of roads in Maintenance Level 1 category may expand as future projects are implemented

ROADS - OPERATIONAL ML 1 (CLOSED ROADS)				
	BENEFITS[13]			
RISKS[12]	**Scores**	**Low** **5-6**	**Medium** **7-9**	**High** **10-15**
	High **14-21**	(HL) Decommission, Close, or Mitigate – Highest Priority **(0.6)** [14] **or (5.6%)**[15]	(HM) Mitigate or Admin Use Only **(9) or (83.3%)**	(HH) Maintain and Mitigate - Highest Priority **(0)**
	Medium **11-13**	(ML) Decommission, Close, or Admin Use Only **(0)**	(MM) Mitigate **(0)**	(MH) Mitigate and Maintain - Second Priority **(0)**
	Low **7-10**	(LL) Decommission, Close, or Convert to Trail **(0.6) or (5.6%)**	(LM) Maintain **(0.6) or (5.6%)**	(LH) Maintain **(0)**

TOTAL OPERATIONAL ML 1 (CLOSED ROADS) = 10.8 MILES

[12] Risks represent the range of total risk scores assigned to each category.
[13] Benefits represent the range of total benefit scores assigned to each category.
[14] Represent the number of road miles assigned to each box in the matrix.
[15] Represent miles of road in matrix box as a percentage of the total miles of roads in these operational maintenance levels.

Table 12: Risk and Benefit Matrix and Recommendations for ML 2 Roads

Maintenance Level 2 roads are roads that are intended for use by high clearance vehicles. This maintenance level category is by far the most common found on the Mountainair RD. It is also the most evenly distributed among the risk-benefit categories. Approximately 40% of the roads fall into a low benefit category, which means that they may have a benefit in very few categories or no known administrative or public benefit. Many of these roads could be moved to a lower maintenance level, be decommissioned or restricted in use.

ROADS - OPERATIONAL ML 2 (HIGH CLEARANCE ROADS)				
	BENEFITS[17]			
RISKS[16]	**Scores**	**Low 5-6**	**Medium 7-9**	**High 10-15**
	High 14-21	(HL) Decommission, Close, or Mitigate – Highest Priority **(32.4)[18] or (8%)[19]**	(HM) Mitigate or Admin Use Only **(102.5) or (25.3%)**	(HH) Maintain and Mitigate - Highest Priority **(45.1) or (11.1%)**
	Medium 11-13	(ML) Decommission, Close, or Admin Use Only **(64.8) or (16%)**	(MM) Mitigate **(69.7) or (17.2%)**	(MH) Mitigate and Maintain - Second Priority **(2.7) or (0.7%)**
	Low 7-10	(LL) Decommission, Close, or Convert to Trail **(60) or (14.8%)**	(LM) Maintain **(28.5) or (7%)**	(LH) Maintain **(0)**

TOTAL OPERATIONAL ML 2 (HIGH CLEARANCE ROADS) = 405.7 MILES

[16] Risks represent the range of total risk scores assigned to each category.
[17] Benefits represent the range of total benefit scores assigned to each category.
[18] Represent the number of road miles assigned to each box in the matrix.
[19] Represent miles of road in matrix box as a percentage of the total miles of roads in these operational maintenance levels.

Table 13: Risk and Benefit Matrix and Recommendations for ML 3 Roads

Maintenance Level 3 roads are roads that are maintained for passenger car travel. These roads are the gateways to forest access for most users. Nearly half of these roads are in the High Benefit/High Risk category. ML 3 roads are more frequently maintained than ML 2 roads. This maintenance prevents severe impacts to the surrounding natural resources.

ROADS - OPERATIONAL ML 3 (PASSENGER CAR ROADS)				
	BENEFITS[21]			
RISKS[20]	**Scores**	**Low 5-6**	**Medium 7-9**	**High 10-15**
	High 14-21	(HL) Decommission, Close, or Mitigate – Highest Priority **(0)**	(HM) Mitigate or Admin Use Only **(0)**	(HH) Maintain and Mitigate - Highest Priority **(49.8)[22] or (84%)[23]**
	Medium 11-13	(ML) Decommission, Close, or Admin Use Only **(0)**	(MM) Mitigate **(5.8) or (9.8%)**	(MH) Mitigate and Maintain - Second Priority **(0.6) or (1%)**
	Low 7-10	(LL) Decommission, Close, or Convert to Trail **(0)**	(LM) Maintain **(0)**	(LH) Maintain **(3.1) or (5.2%)**

TOTAL OPERATIONAL ML 3 (PASSENGER CAR ROADS) = 59.3 MILES

[20] Risks represent the range of total risk scores assigned to each category.
[21] Benefits represent the range of total benefit scores assigned to each category.
[22] Represent the number of road miles assigned to each box in the matrix.
[23] Represent miles of road in matrix box as a percentage of the total miles of roads in these operational maintenance levels.

Table 14: Risk and Benefit Matrix and Recommendations for Decommissioned and Unauthorized Roads

Additional roads are roads that are decommissioned or unauthorized but serve a purpose that warrants adding them to the minimum road system. Two-thirds of these roads were ranked as High or Medium Benefit, of which 71% are also High Risk. Adding these roads to the system will require extra resources, because there are currently not being maintained. Low risk roads in this classification are needed for an efficient transportation system but may be restricted in terms of the types of motorized use allowed and how often they are used. Most additional roads should be added to the system as Maintenance Level 2 roads.

ROADS - ADDITIONAL ROADS (DECOMMISIONED AND UNAUTHORIZED ROADS)				
RISKS[24]	**BENEFITS[25]**			
	Scores	**Low 5-6**	**Medium 7-9**	**High 10-15**
	High 14-21	(HL) Decommission, Close or Mitigate – Highest Priority **(3.3)[26] or (6.8%)[27]**	(HM) Mitigate or Admin Use Only **(15.6) or (32.2%)**	(HH) Maintain and Mitigate - Highest Priority **(3.3) or (6.8%)**
	Medium 11-13	(ML) Decommission, Close, or Admin Use Only **(9.5) or (19.6%)**	(MM) Mitigate **(10.9) or (22.5%)**	(MH) Mitigate and Maintain - Second Priority **(0.0)**
	Low 7-10	(LL) Decommission, Close, or Convert to Trail **(4.8) or (9.9%)**	(LM) Maintain **(1.3) or (2.7%)**	(LH) Maintain **(0.0)**

TOTAL ADDITIONAL ROADS = 48.7 MILES

[24] Risks represent the range of total risk scores assigned to each category.
[25] Benefits represent the range of total benefit scores assigned to each category.
[26] Represent the number of road miles assigned to each box in the matrix.
[27] Represent miles of road in matrix box as a percentage of the total miles of roads in these operational maintenance levels.

Below are the recommendations based on the risk and benefit assessment. Final decisions on the disposition of roads are site-specific and require the appropriate level of NEPA analysis. A complete list of the roads and overall rankings are located in Appendix A.

Table 15: Recommendations for Risk / Benefit Categories for Roads

Risk / Benefit	Recommendations for Roads
Low Risk / Low Benefit **0.6 miles of ML1 Roads** **60 miles of ML2 Roads** **4.8 miles of Additional Roads**	**Decommission, Close,[28] or Convert to Motorized Trail** Public road access is not recommended based on the Risk/Benefit Analysis. If there is no compelling administrative or public need for the road in the long-term, then it should be decommissioned. Due to declining budget, roads in this category may be closed or converted to a trail depending on the level of interest and recreation potential of the route. If there is a future need for the road but no immediate need, then it should remain on the system as a closed (ML 1) road. Closed roads are closed for at least a year and are most effectively managed for short-term uses including timber sales and vegetative treatments. If a road is primarily used for motorized recreation, then it should be converted to a motorized trail. The low risk associated with these routes indicates low priority for investment of time and funds to mitigate risk. Drainage features should be inspected before each closure to prevent resource impacts.

[28] To "close" a road means that its maintenance level is lowered to ML 1. These roads still exist on the ground but vehicular access is prohibited, except when the road is reopened temporarily for an administrative use.

Low Risk / Medium Benefit **0.6 miles of ML1 Roads** **28.5 miles of ML2 Roads** **1.3 miles of Additional Roads**	**Maintain** The majority of these roads should remain open for a single use, administrative use or open for the general public, depending on which type of access is appropriate to meet resource management objectives. The low risk associated with these routes indicates low priority for investment of time and funds to mitigate risk. For roads in this category that are important for public access, the Forest Service should work with cooperating agencies or user groups to provide adequate maintenance. Maintenance of drainage features and preventing erosion are the highest priority issues for these roads.
Low Risk / High Benefit **3.1 miles of ML3 Roads**	**Maintain** The low risk associated with these routes indicates low priority for investment of time and funds to mitigate risk. For roads in this category that are important for public access, the Forest Service should work with cooperating agencies to provide adequate maintenance, where appropriate.
Medium Risk / Low Benefit **64.8 miles of ML 2 Roads** **9.5 miles of Additional Roads**	**Decommission, Close, or Administrative Use Only** General public vehicle access is not recommended for these roads, unless the road is essential for the management of the overall public access. Most of these roads should be closed or restricted to administrative use only depending on the access needs. If there is no compelling administrative or public need for the road in the long-term, then it should be decommissioned.

Medium Risk / Medium Benefit **69.7 miles of ML2 Roads** **5.8 miles of ML3 Roads** **10.9 miles of Additional Roads**	**Mitigate** The majority of these roads should remain open for an administrative use or open for the general public, depending on which type of access is appropriate to meet resource management and recreation objectives. The risks associated may require some mitigation. Mitigation depends upon the specific risks and may include, but is not limited to: additional maintenance, reconstruction, relocation, seasonal road closure. The scale and frequency of these activities will depend on the severity of the risk and the availability of funds. Roads that are ranked within the Medium Risk/High Benefit and High Risk/High Benefit categories take a higher priority in the allocation of mitigation and maintenance funding.
Medium Risk / High Benefit **2.7 miles of ML2 Roads** **0.6 miles of ML3 roads**	**Mitigate and Maintain - Second Priority** The majority of these roads should remain open for a single use, administrative use or open for the general public, depending on which type of access is appropriate to meet resource and recreation management objectives. The risks associated may require some mitigation. Mitigation depends upon the specific risks and may include, but is not limited to: additional maintenance, reconstruction, relocation, seasonal maintenance restriction, and seasonal road closure. The scale and frequency of these activities will depend on the severity of the risk and the availability of funds. Roads that are ranked within the High Risk/High Benefit categories take a higher priority in the allocation of mitigation and maintenance funding.
High Risk / Low Benefit	**Decommission, Close, or Mitigate – Highest**

	Priority
0.6 miles of ML1 Roads **32.4 miles of ML2 Roads** **3.3 miles of Additional Roads**	Vehicle access is not recommended based on the Risk/Benefit Analysis. Roads in this category should be administratively closed or decommissioned. The majority of these roads are not appropriate for administrative use in their current location or condition. If a road is needed for administrative reasons, it should be closed or remain open as a single use road. If access to facilities is provided by the route, it is a high priority to evaluate the potential for mitigating risks on these roads. Coordinate with county government or private landowners to determine maintenance responsibility on roads needed for access to private lands. If a road's primary use is access to communities, request public roads agencies (county, towns, state government) to assume road operational jurisdiction. If a road is needed exclusively for access to private land or needed to manage activities under special use permits, issue a permit for the road. If roads or road segments are not open to the public and under permit, decommission the road.
High Risk / Medium Benefit	**Mitigate or Administrative Use Only**

9 miles of ML1 Roads **102.5 miles of ML2 Roads** **15.6 miles of Additional Roads**	For routes within this category that do not have a public benefit, restrict access to administrative use. The risks associated with these routes may require some mitigation activities. Mitigation depends upon the specific risks and may include, but is not limited to: additional maintenance effort, reconstruction, relocation, seasonal maintenance restriction, and seasonal road closure. The scale and frequency of these activities will depend on the severity of the risk and the availability of funds.
High Risk / High Benefit **45.1 miles of ML2 Roads** **49.8 miles of ML3 Roads** **3.3 miles of Additional Roads**	**Maintain and Mitigate - Highest Priority** Most of these routes are appropriate for general public access to the Forest. Some routes may be open for administrative use only in order to control access to sensitive cultural or biological resources. The risks associated with them may require some mitigation activities. Mitigation depends upon the specific risks and may include, but is not limited to: additional maintenance effort, reconstruction, relocation, seasonal maintenance restriction, seasonal road closure. The scale and frequency of these activities will depend on the severity of the risk and the availability of funds.

Guidelines for Mitigating Road Risks

The general guidelines for mitigating the risks discussed in the previous section are listed below. These guidelines should be used when a road needs to be relocated due to unacceptable resource risks. These may also be used when a new road will be constructed to access a crucial area.

Road Location:

- locate roads to reduce road grade, cutslopes, and fill slopes;
- avoid, where possible, weak geological formations, perennial streams, and floodplains.

Road Design Elements:

- plan adequate drainage features (i.e. culverts, grade dips);
- armor drainage structure outlets;
- stabilize road surface with aggregate or asphalt;
- install erosion mitigations, such as mulch and windrowed slash, on freshly exposed back/fill slopes;
- design road/stream crossings to convey water flow over the road and back into the channel with minimal disturbance to the road.

The following guidelines should be used for existing roads that will remain in their current location.

Road Management:

- close or seasonally restrict road use to minimize adverse impacts to wildlife species that require solitude or tolerate only minimal disturbance;
- control road use over perennial streams;
- continue inventory efforts to evaluate the extent of noxious weed and invasive plant species of concern;
- incorporate non-native invasive species prevention and control into road maintenance;
- treat non-native invasive species before roads are decommissioned; follow-up based on initial inspection and documentation.
- close or seasonally restrict road use when the roads are impassable due to wet conditions to minimize adverse resource damage

Chapter 5
STEP 5: DESCRIBING OPPORTUNITIES AND THE MINIMUM ROAD SYSTEM

Purpose

The purpose of this Step is to list:

- Actions that would implement the minimum road system
- Actions that respond to the issues

Actions that Would Implement the Minimum Road System

The Minimum Road System

36 CFR 212.5 (b) is a portion of the Travel Management Rule and it states:

> "…b) Road system--(1) Identification of road system. For each national forest, national grassland, experimental forest, and any other units of the National Forest System (Sec. 212.1), the responsible Official must identify the minimum road system (MRS) needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. In determining the minimum road system, the responsible official must incorporate a science-based travel analysis at the appropriate scale and, to the degree practicable, involve a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. The minimum system is the road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR part 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance."

The Interdisciplinary Team recommended the minimum road system for the Mountainair RD using the direction in 36 CFR 212.5 (b). The recommended MRS includes 347 miles of existing maintenance level 1-3 roads, 48.4 miles of additional roads (13.2 of user created roads; 34.8 miles decommissioned roads). Refer to Appendix A for roads recommended for inclusion in the MRS and Maps 7 and 8 for the location of the roads.

The MRS in this document is the IDT's recommendation only. During the NEPA process, roads may be added or deleted from the existing road system in order for the District to achieve the MRS.

A final consideration in developing the MRS is road maintenance. Based on funding levels over the previous five years, the Cibola National Forest can only afford to maintain about 9% of the existing system (See Appendix H). Creating a road system to match the available funds by simply closing roads will not result in a road system that meets the access needs for public or for administrative purposes.

Actions that Respond to the Issues[29]

The following section describes strategies that the Forest may choose to employ in projects and situations where the issues occur (see Chapter 3). The scale at which these actions may be implemented is dependent on the site and the compatibility of the action with the overall management focus of the surrounding area. The list below is intended to provide options that project leaders and decision-makers may consider when implementing changes to the road system.

Issue 1: Impacts from cross-country motor vehicle travel and unauthorized routes

Action: Provide information and education about motor vehicle regulations and responsible use of motorized vehicles on the National Forest. Install information board at area trail heads, recreation sites, and parking areas.

Action: Install route numbers on all system roads and motorized trails at junctions with system and unauthorized routes to assist users with compliance of motor vehicle use regulations.

***Action*:** Educate the public to create an understanding of the problems created by off road driving. Implement an ongoing effort to educate forest users of the motorized travel policy.

***Action*:** Utilize enforcement to curtail off-road driving. Implement patrols and field presence at appropriate times of year (such as hunting season, holidays, weekends, etc) in identified areas. This effort is also used to educate users of the travel policy.

Action: Rehabilitate areas damaged by off-route driving. NM State Recreation Trail Program, EPA's Clean Water Act 319 grant program, and a building NM State OHV fund are all potential outside funding sources to rehabilitate and revegetate damaged areas in addition to federal appropriations.

Issue 2: Insufficient resources for maintenance of the existing system roads[30]

Action: Reduce the number of road miles that need to be maintained or reduce the maintenance level to reduce the maintenance unit cost. Reducing the miles of roads that need to be maintained by transferring closed roads into motorized trails will increase trail maintenance costs.

***Action*:** Leverage funds/efforts to increase maintenance capabilities. Continue to seek opportunities within the Forest, with other Forests, with counties and private individuals to increase the amount of maintenance accomplished. For motorized trails there are opportunities to work with volunteers to maintain them.

Action: Prioritize roads that are good candidates for transfer of jurisdiction to counties, which facilitates a reduction in the number of road miles requiring maintenance with NFS funds. NFS roads that provide access to residential developments would be good candidates to transfer to county jurisdiction

Issue 3: Need to obtain right-of-Way and access

[29] Issues are described in Chapter 3

[30] See Appendix H for further description of the impact these actions would have on the forest-wide roads budget.

***Action*:** Emphasize right-of-way acquisition with out-year program planning and current year project planning. Adjust funding to areas directed at accomplishing right-of-way acquisition.

***Action*:** Negotiate with land owners to obtain formal right-of-way access to routes needed.

Action: Maximize cooperation from adjacent landowners by proposing to issue a reciprocal easement.

Issue 4: Continued use of unauthorized and decommissioned roads

***Action*:** Employ devices such as signs and physical barriers which discourage continued travel. Natural devices (downed trees, boulders, etc.) are preferred in most cases, but in situations where previous decommissioning efforts have been unsuccessful, more aggressive means may be employed.

***Action*:** Monitor decommissioned and unauthorized roads after the implementation of barriers and other mitigation measures. Keep records of successful and unsuccessful strategies for discouraging travel to improve future rehabilitation projects.

Action: In areas where there is a high density of unauthorized roads, construct perimeter barriers to prevent access from multiple points and take action to encourage revegetation of other routes.

Issue 5: Environmental impacts

Action: Reduce the number of road and trail miles that go through occupied Threatened and Endangered species habitat

Action: Reduce the number of high-use routes that go through nesting sites. Loop trails and trails near camping areas with high day use can be outside of known nesting areas for owls and hawks. Proper location of the access point can help in reducing use of several trails.

Action: Place seasonal restrictions on motorized trails and roads going through key nesting and roosting areas.

Action: Reduce the road width and maintenance level to minimum needed for safe vehicle passage and to meet the intended need in sensitive wildlife areas

Action: Develop and promote trail uses that are outside of known threatened, endangered, or sensitive occupied habitats.

Action: Where feasible, reroute existing roads that impact important heritage sites. Perimeter barriers may be necessary if unauthorized use is occurring within the site

Action: Implement the guidelines for mitigating road risks to reduce soil and drainage impacts from roads.

Issue 6: Human-Caused Fire

Action: Reduce road density in areas with high fire risk to reduce the potential for human-caused fires.

Action: Instead of decommissioning roads in high fire risk areas, close them for use as fire line roads during prescribed burns and wildfires in consultation with the fire staff.

Action: Restrict motorized vehicle use on the District to a designated road system through Travel Management.

Issue 7: Need for access to forest product gathering areas

Action: Consult with tribes and land grant communities to determine areas that are a high priority for product gathering. Maintain access to these areas so there are enough well-maintained access points to prevent resource damage and proliferation of unauthorized roads.

Issue 8: Trespass onto private lands from National Forest System lands

Action: Private land access may be managed under permits, rather than a publicly open road. This will help discourage the public from using the road while maintaining access to the property.

***Action*:** Clearly sign boundaries where there has been a history of trespass and vandalism on adjacent private land.

Issue 9: Recreation user conflicts

***Action*:** Modify route designations to reduce user conflict. Provide maps and/or lists of routes where the dominant use is motorized or non-motorized as a way to guide use and minimize conflicting areas.

Action: Plan separate routes for uses which are inherently incompatible. Plan for routes that emphasize motorized use separate from routes that emphasize non-motorized use where appropriate.

***Action*:** Provide accurate and timely information for users to make informed decisions about choosing routes to travel.

- Recreation opportunity guides, maps, and information are available on the internet and at offices. These sources describe the different uses on the trails and what one may encounter. They also list the trail location and physical characteristics which would be useful to users.
- Provide GPS files for download via the internet. These files would be available for each district and could show the user precisely which route is open for motorized use.
- Provide lists of motorized routes available via the internet and/or at local offices.

Action: Conduct traffic count and type of use information on identified roads and trails to better understand the use of each route.

Action: On multiple-use trails, where there has been user-conflict, place signs that show right-of-way etiquette.

Chapter 6
STEP 6: REPORTING

Purpose

The purpose of this step is to report the key findings of the analysis.

Key Findings of the Analysis

Through the Travel Analysis Process (TAP) the Interdisciplinary Team (IDT) does not recommend adding motorized trails, areas, or constructing additional roads. Some short road reroutes around naturally or culturally sensitive areas or where right-of-ways are lacking are recommended, see Appendix D. The IDT ranked routes based on their *risks* to natural and cultural resources and their *benefits* to recreation use, forest product access, and emergency (namely, fire) access. The IDT recommends that about 34% of roads analyzed could be decommissioned, closed, converted to a trail, or mitigated to reduce resource risk. 66% of the current road system should be mitigated to reduce resource risk and then maintained. Maps 4 and 5 list and show the TAP recommendations. A complete list of the individual rankings of each criterion for each road can be found in Appendix A.

Literature Cited

University of New Mexico - Bureau of Business and Economics Research (BBER). 2007. Socioeconomic Assessment of the Cibola National Forest. Published: June 2007.

USDA Forest Service. 1999. Roads Analysis: Informing decisions about managing the National Forest Transportation System. Misc. Rep. FS-643. Washington, D.C.: U.S. Dept. of Agriculture Forest Service. 222 p.